

REMARKS

STATUS OF CLAIMS

Claims 6-7, 10-12, 21-22, 25-27, and 35-37 have been cancelled.

Claims 1-5, 8-9, 15-20, 23-24, 30-34, and 38 have been amended.

Claims 39-52 have been added.

No claims have been withdrawn.

Claims 1-5, 8-9, 13-20, 23-24, 28-34, and 38-52 are currently pending in the application.

STATUS OF DRAWINGS

A set of drawings was filed with the application on August 24, 2001, yet neither the Final Office Action mailed on February 14, 2006 nor the previous Non-Final Office Action mailed on August 19, 2005 indicate whether or not the drawings as filed with the application are acceptable, which is typically indicated in item 10 of the Office Action Summary sheet of an Office Action. The Applicant respectfully requests that the status of the drawings as filed with the application be indicated on the next communication from the Office.

STATUS OF INFORMATION DISCLOSURE STATEMENT FILED 8/3/05

On August 3, 2005, the Applicant filed an Information Disclosure Statement (IDS) with a Form 1449 that listed 4 U.S. patents, 1 published U.S. patent application, and two non-patent documents. The postcard received back from the Office indicates that this IDS was received on August 8, 2005. Although numerous other Form 1449's from other IDS's file before and after this particular IDS have been returned, the Applicant has yet to receive back a copy of the initialed Form 1449 indicating that these references have been considered from the August 3, 2005 IDS.

The Applicant has reviewed the status of this IDS via Private PAIR, which indicates that this IDS was filed and reference capture occurred on August 8, 2005, followed thereafter by an entry dated August 8, 2005 that "Information Disclosure Statement considered." The

Applicant has verified that a copy of the IDS and Form 1449 are included in the Image File Wrapper for this application.

The Applicant respectfully requests that a copy of the initialed Form 1449 for the IDS filed on August 8, 2005 be returned with the next communication from the Office.

INTERVIEW SUMMARY

The Applicant thanks the Examiner for the Interview conducted on April 14, 2006. The interview was between Examiner John Walsh and the applicant's attorney, Craig G. Holmes. Pending Claim 1 that was rejected in the Office Action was discussed along with U.S. Patent No. 6,745,034 issued to *Wang*.

The discussion focused on the Applicant's proposed amendment to Claim 1 to read "the first participant communicating directly with the second participant..." and how that proposed amendment would distinguish the approach of Claim 1 over *Wang*. The Examiner agreed that such an amendment would help to distinguish Claim 1 over *Wang*, although the Examiner indicated that a final determination would be made upon receipt of this amendment and accompany remarks, as well as the likely performance of another search.

The discussion also focused on support for this proposed amendment to Claim 1, with the Applicant explaining that the addition of the word "directly" was supported by at least FIGs. 1A-1C that illustrate connections between the participants, such as between master participant P4 and associate master participant P5 of FIG. 1A. The Applicant also explained that other figures that describe the sending of packets from one participant to another at one time slot and waiting for a reply packet at another time slot supported that such participants communicate directly. The Applicant agreed to provide a description of the support for the term "directly" in this response, and the Examiner indicated that he would review those remarks before deciding whether "directly" was supported by the disclosure.

The Applicant is providing herein the amendment to Claim 1 that was proposed during the interview, along with similar amendments to the remaining independent claims, among other changes to the claims as reflected in the amendment above. The Applicant is also providing support for the change to Claim 1, specifically the addition of the term "directly," along with support for other claim amendments and newly added claims.

SUPPORT IN DISCLOSURE FOR CLAIM AMENDMENTS AND ADDED CLAIMS

As a preliminary matter, the Application takes note of the following federal rules and guidance from the MPEP regarding the support for and selection of terms used in the claims. MPEP §608.01(i) cites 37 CFR 1.75(d)(1), which states in pertinent part (emphasis added): “The claim or claims must conform to the invention as set forth in the remainder of the specification and the *terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.*” However, MPEP §608.01(o) states: “an applicant is not limited to the nomenclature used in the application as filed.” Similarly, MPEP §1302.01 states: “It should be noted, however, **that exact terms need not be used *in haec verba* to satisfy the written description requirement** of the first paragraph of 35 U.S.C. 112... See also 37 CFR 1.121(a)(5) [now 37 CFR 1.121(e)] which merely requires *substantial* correspondence between the language of the claims and the language of the specification.” (Emphasis added.)

The Applicant respectfully submits that the amended claims and added claims are supported by the description and substantially correspond to the specification, thereby complying with the 37 CFR 175, and 37 CFR 1.121(e), based on the support described below for the identified claims.

Note that while various embodiments, implementations, and examples from the specification are discussed herein as providing the support for the claim amendments above, the claims are not limited to the scope of those embodiments, implementations, and examples from the specification that are discussed herein. Rather, as indicated in the specification, various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention, and as a result, the specification and drawings are to be regarded in an illustrative sense rather than a restrictive sense. (See Application, page 26, line 24 – page 27, line 3.)

A. CLAIMS 1, 16, AND 31

Claims 1, 16, and 31 are amended to feature “the first participant communicating directly with the second participant...” This claim amendment is supported by at least the

following: FIGs. 1A – 1C; page 7, line 20 – page 9, line 13; FIGs. 3A-3C; page 11, line 2 – page 15, line 21; FIGs. 6A –6C; and page 18, line23 – page 22, line 2.

In particular, as illustrated in FIGs. 1A-1C that are described on page 7, line 20 to page 9, line 13, the participants in communications arrangement 100 communicate directly with each other, as indicated by the lines between the pairs of participants, such as between master participant P4 and each of slave participants P1, P2, P3, and associate master participant P5 in FIG. 1A. When master participant P4 fails, associate master participant P5 becomes master participant P5, as illustrated in FIG. 1B, and thereafter P5 communicates directly with P1, P2, and P3 as indicated by the lines between P5 and each of P1, P2, and P3. Finally, slave participant P2 is selected to become associate master participant P2, as illustrated in FIG. 1C.

Note that in FIG. 1A, which illustrates the state of communications arrangement 100 after designation of participant P5 as the associate master, there is only one solid line connecting master participant P4 with associate master participant P5. This depiction of a direct communication between participants P4 and P5 is an example of the amended step of Claim 1, namely “the first participant communicating directly with the second participant to indicate that the second participant has been designated to perform the one or more functions...” Specifically, in FIG. 1A, master participant P4 is an example of the “first participant” of Claim 1 (e.g., the master participant P4 that is initially assigned to perform the one or more functions and that communicates to participant P4 that P4 is designated as the associate master). Similarly, associate master participant P5 is an example of the “second participant” of Claim 1 (e.g., the associate master participant P5 that is designated by master participant P4 and that takes over as master, if necessary, as illustrated by FIG. 1B).

In addition, FIGs. 3A and 3B illustrate communications between a master participant and either a slave participant (FIG. 3A) or an associate master participant (FIG. 3B) in the context of a frequency hopping communications arrangement that employs a hopping sequence. In both of FIGs. 3A and 3B, when the master communicates to either the slave participant or the associate master participant, the master does so via an initial communications channel during the master transmission time slot, and if the master expects a reply, the master hops to the next channel in the hopping sequence and waits for the expected reply during the next time slot. This means that the master is communicating directly with the

slave and associate master because the master is transmitting on one channel for one time slot and waiting for a reply via another channel at the next time slot. If the communications were indirect, meaning that the communications passed through another participant between the master participant and the slave participant (FIG. 3A) or between the master and the associate master participant (FIG. 3B), then it would take two time slots for each transmission: one time slot for the transmission from the master participant to the some other intermediate participant, and then a second time slot for the transmission from the intermediate participant to the slave participant (FIG. 3A) or to the associate master participant (FIG. 3B). Since neither of FIGs. 3A or 3B illustrate an indirect communication via an intermediate participant, little less the use of two time slots for a single communication between the master participant and the recipient of the communication, FIGs. 3A and 3B also support the amendments to Claims 1, 16, and 31, namely “the first participant communicating directly with the second participant...”

Finally, FIGs. 6A-6C illustrate how associate master participants and slave participants process different types of packets from a master participant. In FIG. 6A, the steps for a slave participant or an associate master participant processing a packet from a master participant is depicted in which the recipient participant receives the packet over one channel at one time slot, and then hops to the next channel and transmits a reply at the next time slot. In FIG. 6B, an associate master participant is processing a handover request from a master participant, which involves receiving the handover request over one channel at one time slot and hopping to the next channel and transmitting the reply at the next time slot, in which the reply is either a rejection or acceptance of the handover as requested by the master. In FIG. 6C, a slave participant is processing a promotion request from a master participant for the slave participant to become the associate master participant. This involves the slave participant receiving the request over one channel at one time slot and hopping to the next channel and transmitting the reply at the next time slot, which is either a rejection or acceptance.

As with FIGs. 3A-3B, FIGs. 6A-6C involve requests sent over one channel at one time slot and replies sent over another channel at the next time slot. If the communications were indirect, meaning that the communications passed through another participant between the sender of a packet and the receiver of the packet, it would take two time slots for each transmission: one time slot for the transmission from the originator of the communication to

the intermediate participant, and another time slot for the transmission from the intermediate participant to the recipient of the communication. Since none of FIGs. 6A-6C illustrate the use of two time slots for a single communication, FIGs. 3A and 3B also support the amendments to Claims 1, 16, and 31, namely “the first participant communicating directly with the second participant...”

B. CLAIMS 2, 17, AND 39

Claims 2, 17, and 39 reflect two changes. The first change is that the unassigning of the functions is in response to the one or more handoff criteria being satisfied, which is made to avoid confusion with the respective independent claims in which the functions are originally assigned. By specifying that the unassigning is in response to satisfying the handoff criteria, it is clear that the functions originally performed by the first participant or device are transferred to the second participant or device as described in the application, such as with reference to FIGs. 1A-1C discussed above.

The second change is that the feature of “the first participant communicating directly with the second participant **via a single wireless connection** between the first participant and the second participant...” This change is supported by the same portions of the disclosure as discussed above in regards to Claims 1, 16, and 31. In addition, this change is also supported by the Application’s discussion that the participants can be mobile devices and that the participants are part of a wireless network. (See Application, page 8, lines 17-21; page 15, lines 19-21; and page 22, lines 9-10.)

C. CLAIMS 3, 18, AND 40

Claims 3, 18, and 40 are amended to be consistent with the amendments to Claims 1, 16, and 31 from the response to the previous Office Action and therefore are supported by Claims 1, 16, and 31, along with the original support for the prior amendments to Claims 1, 16, and 31.

D. CLAIMS 4, 19, AND 32

Claims 4 and 19 are amended to include the original feature of Claims 5 and 20, and Claim 32 is amended to be consistent with those changes to Claims 4 and 19. Thus, the amendments to Claims 4, 19, and 32 are supported by Claims 5 and 20, prior to the amendment above.

E. CLAIMS 5, 20, AND 41

Claims 5, 20, and 41 are amended to feature that “the steps of designating the second participant and the first participant communicating directly with the second participant are performed during a time period that begins with assigning the one or more functions to the first participant and ends with any of the one or more handoff criteria being satisfied.” This change is made to clarify that the use of an associate master as described in the specification can be viewed as a two-step procedure: (1) designating the associate master as the participant to take over for the master, and (2) the actual handoff of the functions from the master to the associate master. As discussed above, the designation of the associate master is separate from the handover to the associate master, as illustrated by FIG. 6B that depicts the handover request between master and associate master (e.g., the designation of the associate master) while FIG. 6C depicts the promotion request that precedes the handover request (e.g., the handover from the master to associate master).

This two-step procedure is also illustrated in FIGs. 1A-1C that show three different states of the communications arrangement 100, namely when the associate master is designated but the original master is still functioning (FIG. 1A) and then when the master fails and the associate master becomes master (FIG. 1B). Thereafter, a new associate master is designated (FIG. 1C) that would become the master in the event that the new master later fails.

F. CLAIMS 8, 23, AND 33

Claims 8, 23, and 33 are amended to no longer feature that all participants are mobile devices, but rather that at least one of the first and second participants is a mobile device. Therefore, Claims 8, 23, and 33 are supported by Claims 8, 23, and 33 prior to this amendment.

G. CLAIMS 9, 24, AND 34

Claims 9, 24, and 34 are amended to incorporate the different handoff criteria of Claims 10-12, 25-27, and 35-37, respectively, since the latter sets of claims are now cancelled. In addition, Claims 9, 24, and 34 include one additional handoff criteria, namely “a power level of the first participant falling below a specified threshold,” which is also supported by the Application. (See Application, page 8, lines 17-20 and page 12, lines 9-11.)

H. CLAIMS 15, 30, AND 42-43

Claims 15 and 30 are amended to clarify that the one or more participants that designate the second participant do not include the first participant, which is featured in Claims 14 and 29. This was the original intended meaning of Claims 15 and 30, but based on the Final Office Action, it appears that merely using the word “other” failed to convey that the participants designating the second participant do not include the first participant, as described in the Application. (See Application, page 9, lines 10-12.)

Claims 42 and 43 are newly added claims that include similar features to Claims 14-15 and 29-30, although in the context of the communications device of Claim 31 instead of the method and computer-readable storage medium of Claims 1 and 16, respectively. Thus, Claims 42 and 43 are supported by Claims 14-15 and 29-30.

I. CLAIM 38

Claim 38 is amended to more closely parallel the features of Claims 13 and 28, and thus the amendments to Claim 38 are supported by Claims 13 and 28, along with FIGs. 1A-1C and 6A-6C as discussed above.

J. CLAIMS 44, 47, AND 50

Claims 44, 47, and 50 are newly added claims that provide further detail on the feature of Claims 1, 16, and 31 of “the first participant communicating directly with the second participant to indicate that the second participant...” Specifically, Claims 44, 47, and 50 reflect the use of two packets, one to indicate that the second participant is designated to perform the functions if any of the handoff criteria are satisfied, and another packet that indicates the acceptance by the second participant of that designation. Thus, Claims 44, 47, and 50 are supported by FIG. 6C and the associated portions of the Application, as discussed above.

K. CLAIMS 45, 48, AND 51

Claims 45, 48, and 51 are newly added claims that provide further detail on the feature of Claims 1, 16, and 31 of “assigning the one or more functions to the second participant...” and that depend on Claims 44, 47, and 50, respectively. Specifically, Claims 45, 48, and 51 reflect the use of two more packets, a third packet to indicate that the second participant is to perform the functions, and a fourth packet that indicates the acceptance by the second

participant of that responsibility. Thus, Claims 45, 48, and 51 are supported by FIG. 6B and the associated portions of the Application, as discussed above.

L. CLAIMS 46, 49, AND 52

Claims 46, 49, and 52 are newly added claims that reflect the use of a timer as a handoff criteria, which is supported by FIG. 4 that describes the use of a timer by an associate master to determine that the master has failed. (See Application, FIG. 4, and page 16, line 1 – page 17, line 13.)

SUMMARY OF THE REJECTIONS/OBJECTIONS

Claims 1-4, 7-19, and 22-38 have been rejected under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent Number 6,745,034 issued to Wang et al. ("*Wang*"). Claims 5-6 and 20-21 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Wang* in view of the reference titled "Adaptive Frequency Hopping Implementation Proposals for IEEE 802.15.1/2 WPAN" by Gan et al. ("*Gan*"). The rejections are respectfully traversed.

RESPONSE TO REJECTIONS BASED ON THE PRIOR ART

A. CLAIM 1

(1) INTRODUCTORY DISCUSSION OF CLAIM 1 AND *WANG*

As amended above, Claim 1 now features "the first participant communicating **directly** with the second participant to indicate that the second participant has been designated to perform the one or more functions if any of the one or more handoff criteria are satisfied..." (Emphasis added). In contrast to the approach of Claim 1, *Wang* discloses that the serving base station (e.g., BS1 of Figure 1) and the target base station (e.g., BS2 of Figure 2) are not capable of direct communication because neither of BS1 and BS2 lies within the cell served by the other base station (e.g., BS1 is outside the dashed circle 14-2 illustrates the cell coverage of BS2 and BS2 is outside the dashed circle 14-1 that illustrates the cell coverage of BS1). Thus, as noted in the "Response to Arguments" section of the Final Office Action, at best the base stations BS1 and BS2 are only capable of communicating via a mobile station, such as mobile station MS of Figure 1. Thus, the serving and target base stations of *Wang* are only capable of communicating ***indirectly*** via a mobile station.

(2) THE FINAL OFFICE ACTION'S CITATIONS FROM *WANG*

The Final Office Action states that *Wang* discloses “the first participant communicating with the second participant to indicate that the second participant has been designated to perform the one or more functions if any of the one or more handoff criteria are satisfied (col. 6, lines 58-65; col. 8, lines 8-10; col. 8, lines 24-26).” However, the first cited portion of *Wang* describes Figure 3 that depicts the functional elements of the apparatus 42 of Figure 1, which may be located at the mobile station 12, the base transceiver station 16, or the base station controller 20, and that the apparatus causes initiation of a handoff request from the serving station to the target base station. (Col. 6, lines 58-65.) Yet this first cited portion of *Wang* discloses nothing about the serving and target base stations communicating with each other, little less that the serving and target base stations are communicating directly with each other, as is the case in the approach of Claim 1 that has “the first participant communicating directly with the second participant...”

The second cited portion of *Wang* describes “procedures to trigger a request for a handoff of communications with a mobile station from a serving base station to a target base station.” (Col. 8, lines 8-10.) Yet again, this second cited portion of *Wang* discloses nothing about the serving and target base stations communicating with each other, little less that the serving and target base stations are communicating directly with each other, as is the case in the approach of Claim 1 that has “the first participant communicating directly with the second participant...”

The third cited portion of *Wang* describes that the “initial hysteresis threshold values are utilized at the decision block 102 to determine whether a handoff of communications should be requested from the serving base station to a target base station.” (Col. 8, lines 23-26.) And yet again, this third cited portion of *Wang* discloses nothing about the serving and target base stations communicating with each other, little less that the serving and target base stations are communicating directly with each other, as is the case in the approach of Claim 1 that has “the first participant communicating directly with the second participant...”

Finally, the “Response to Arguments” section of the Final Office Action states that “the base stations can communicate with each other through the mobile devices (see col. 6, lines 58-65; col. 8, lines 8-10; col. 8, lines 24-26).” While the Applicant disagrees that the

cited portions of *Wang* discloses any communications between the base stations, the Applicant respectfully submits that even if *Wang* is properly interpreted as disclosing that the base stations communicate via the mobile stations, such communications are therefore indirect due to the use of the mobile station to relay the communications between base stations, and thus *Wang* fails to disclose that the base stations can communicate directly, as is the case in the approach of Claim 1 that has “the first participant communicating directly with the second participant...”

(3) CONCLUSION OF DISCUSSION OF CLAIM 1 AND *WANG*

Because *Wang* fails to disclose, teach, suggest, or in any way render obvious “the first participant communicating directly with the second participant to indicate that the second participant has been designated to perform the one or more functions if any of the one or more handoff criteria are satisfied” (emphasis added), the Applicant respectfully submits that, for at least the reasons stated above, Claim 1 is allowable over the art of record and is in condition for allowance.

C. CLAIMS 16 AND 31

Claims 16 and 31 contain features that are either the same as or similar to those described above with respect to Claim 1. For example, Claim 16 features “the first participant communicating directly with the second participant to indicate that the second participant has been designated to perform the one or more functions if any of the one or more handoff criteria are satisfied,” which is the same as in Claim 1. As another example, Claim 31 features that the mechanism of the communications device is configure to “communicate directly with the particular communications device to indicate that the particular communications device has been designated to perform the one or more functions if any of the one or more handoff criteria are satisfied,” which is similar to Claim 1. Therefore, based on at least the reasons stated above with respect to Claim 1, the Applicant respectfully submits that Claims 16 and 31 are allowable over the art of record and are in condition for allowance.

D. CLAIMS 2-5, 8-9, 13-15, 17-20, 23-24, 28-30, 32-34, AND 38-52

Claims 2-5, 8-9, 13-15, and 47-49 are dependent upon Claim 1, Claims 17-20, 23-24, 28-30, and 50-52 are dependent upon Claim 16, and Claims 32-34 and 38-46 are dependent upon Claim 31. Each of Claims 2-5, 8-9, 13-15, 17-20, 23-24, 28-30, 32-34, and 38-52 is therefore allowable for the reasons given above for Claims 1, 16, and 31. In addition, each of Claims 2-5, 8-9, 13-15, 17-20, 23-24, 28-30, 32-34, and 38-52 introduces one or more additional limitations that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those limitations is not included at this time except for a few of those claims that are addressed further below. Therefore, it is respectfully submitted that Claims 2-5, 8-9, 13-15, 17-20, 23-24, 28-30, 32-34, and 38-52 are allowable for the reasons given above with respect to Claims 1, 16, and 31.

Claim 2 features “first participant communicating directly with the second participant **via a single wireless connection between the first participant and the second participant** to indicate that the second participant has been designated to perform the one or more functions if any of the one or more handoff criteria are satisfied” (emphasis added), and Claims 17 and 32 include the same or a similar feature. Thus, in Claims 2, 17, and 32, not only the first participant communicate directly with the second participants, the communication is via a single wireless connection between the first and second participants. *Wang* fails to disclose this feature of Claims 2, 17, and 32 because in *Wang*, the base stations are incapable of communicating via a single wireless connection because each base station lies outside the cells served by the other base stations, as illustrated in Figure 1 of *Wang*, and thus there is no single wireless connection between base stations.

Also, Claim 47 features “the first participant sending a first packet directly to the second participant to indicate that the second participant has been designated to perform the one or more functions if any of the one or more handoff criteria are satisfied” and “the first participant receiving a second packet directly from the second participant to indicate that the second participant accepts being designated to perform the one or more functions if any of the one or more handoff criteria are satisfied,” while Claims 44 and 50 include the same or similar features. In addition, Claim 48 that depends on Claim 47 features “the first participant sending a third packet directly to the second participant to indicate that the second participant

is to perform the one or more functions” and “the first participant receiving a fourth packet directly from the second participant to indicate that the second participant accepts responsibility for performing the one or more functions,” while Claims 45 and 51 include the same or similar features.

Thus, Claims 44, 47, and 50 are different from the approach of *Wang* in which there is no prior designation by one base station of another base station to take over with a corresponding acceptance from the base station being designated, and but merely a handover request at the time that the handover is to be acted upon. And even for that handover request, there is nothing in *Wang* about an acceptance of that request by the base station to which the mobile station is being transferred. Furthermore, the additional packets of Claims 45, 48, and 51 clarify that in addition to the first packet for the request to designate the second participant to take over for the first participant and the second packet for the acceptance of that request, there is another pair of packets used to request the actual handover and acceptance of same, which again is different from the approach of *Wang* in which there is merely a handover request.

CONCLUSION

The Applicant believes that all issues raised in the Final Office Action have been addressed and that allowance of the pending claims is appropriate. Entry of the amendments and further examination on the merits are respectfully requested.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

To the extent necessary to make this reply timely filed, the Applicant petitions for an extension of time under 37 C.F.R. § 1.136.

If any applicable fee is missing or insufficient, throughout the pendency of this application, the Commissioner is hereby authorized to any applicable fees and to credit any overpayments to our Deposit Account No. 50-1302.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Hon. Commissioner for Patents, Mail Stop RCE, P.O. Box 1450, Alexandria, VA 22313-1450.

on April 20, 2006 by Gary Reynolds